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THE NORTH CAROLINA
AGRICULTURAL EXPERIMENT STATION
W. A. WITHERS, A.M., ACTING DIRECTOR

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MINERALINE

AN ADULTERANT PROPOSED FOR WHEAT FLOUR, TOGETHER WITH A REPORT OF SOME MISCELLANEOUS EXAMINATIONS FOR ADULTERATION

W. A. WITHERS AND H. W. PRIMROSE.

RALEIGH, N. C.
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RALEIGH, N. C.

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The Station is glad to receive any inquiries on agricultural subjects *Address all communications to the Agricultural Experiment Station, and not to individuals.* They will be referred to the members of the Station staff most competent to answer them.

MINERALINE.

AN ADULTERANT PROPOSED FOR WHEAT FLOUR.

W. A. WITHERS, A.M , CHEMIST.
H. W PRIMROSE, B.S., ASSISTANT CHEMIST.

INTRODUCTORY.

It is hardly within the province of the Experiment Station to prosecute violators of law, but we feel justified in calling the attention of the public to practices which we feel will result in much injury to our people. The adulteration of food can not be justified under any circumstances. The party who mixes an inferior or worthless article and sells it under the name of the article he imitates could hardly be classed as an honest man, and where the adulteration is injurious to the health of the consumer, he could hardly be classed as a friend of the public health. The following investigation was undertaken with a view to ascertaining the extent of an attempt to defraud our people, by the admixture of a mineral with flour. The results of that investigation are given herewith.

ADVERTISEMENT OF MINERALINE.

In the *American Grocer* of June 15, 1898, an article appeared containing a letter from the York Manufacturing Company of Greensboro, N. C., offering Mineraline for use in adulterating flour and other articles of food. The letter read as follows:

GREENSBORO, N. C., May 7, 1898.

GENTLEMEN:—We invite your attention to our Mineraline, which is, without doubt, the greatest existing discovery.

There is no flour-mill man who can afford not to use it, for several reasons.

Your flour will be much whiter and nicer; it does not injure the flour in any way, is not at all injurious to the health, and by using Mineraline you realize a margin of from $400 to $1,650 on each car load you use.

To secure a low freight rate, we mark it as "ship stuff."

We can furnish you Mineraline f. o. b. cars your station, for high grade flour, at $20 per ton; for medium grade flour at $16 per ton; for bread meal, $12 per ton; and for feed meal at $8 per ton.

For a high grade flour, use 15 per cent. Mineraline; for medium grade flour use 12 per cent. Mineraline; for bread meal use 12 per cent. Mineraline, and for feed meal use 18 per cent. Mineraline.

We furnish all our customers with a mixer, free of charge; this machine will distribute completely any proportion desired, and costs nothing to attach.

All you have to do is to bore a hole in your elevator pipe, clamp on the machine, attach a cord to run it, fill up the hopper, and set the feed to the proportion desired.

Enclosed find sample of Mineraline for medium-grade flour.

You cannot afford to let your competitor beat you in both quality and margin. We would be glad to hear from you.

Very truly yours,

THE YORK MANUFACTURING COMPANY.

The following remarks were made by the Editor of the *American Grocer:*

"We would not have believed it possible that any mineral substance could be employed in the adulteration of flour, but we have this week received from one of our correspondents the following circular. * * * We have had the samples of minerals examined by our chemist, and it seems to consist of ground soapstone. There is no excuse whatever for the use of mineral adulterants in flour. It is a crime against the community and we hope the food commissioners of the States having food laws, will keep a sharp lookout for flour adulterated with Mineraline."

INFORMATION GATHERED.

On December 3rd, 1898, nearly five months after the publication of the article in the *American Grocer* and nearly six months after the date of the circular, one of us visited Greensboro to ascertain, if possible, something of the York Manufacturing Company, the location and extent of its business and the character of the product offered for sale. There seemed to be no difficulty in ascertaining the location of the office of the Company, or what was supposed by the public to be the office of the Company, although there was no sign over the door. Apart, however, from the lack of the sign, there seemed to be no disposition to conceal the contents of the room from the public. In the office was found a fresh lot of talc, or soapstone, which the party in charge informed us had been received from Liberty, Randolph County. There were also in the room piles of different grades of the mineral. There was also in the room a mill for grinding and some of the rock which appeared to have been recently ground. There were also a dozen or two cans of varnish in the room. No objection was made to furnishing us samples of the different grades of rock and of the ground material and a suggestion was made that samples could be secured up town from the representative of the Company, who had charge of the commercial side of the business. Application was made for Mineraline at the office to which we were referred. The clerk in charge furnished us with a sample both of the ground and unground material and informed us that preparations were being made toward "adding new machinery, enlarging the business and moving nearer the mines." We were also informed by the clerk that the ground portions represented the samples which

were distributed to the public. The business agent, we regret to say, was not in his office and we were unable to see him. We may add, however, that our State Chemist has received samples of the same material for analysis, from the party represented to us as the business agent of the Company. One sample sent was contained in an envelope bearing the words "York Manufacturing Company." We examined the records of the Clerk of the Court, but failed to find that the York Manufacturing Company was incorporated. We found, however, that a company had been incorporated, a portion of whose business was "the grinding of cereals and of minerals of all kinds," and one of the incorporators is the party considered by the public as one of the leading members of the York Manufacturing Company.

EXTENT OF SALE.

It may be said to the credit of the millers that we found no evidence of the sale of the material for the purpose stated in the circular letter which has been quoted above, but it seems from the information which we gathered, that a systematic effort was made to create a demand for Mineraline.

CHARACTER OF MINERALINE.

We took a sample of the ground material to several parties who are considered good cooks and they, after a superficial examination and without cooking, pronounced it to be a fair grade of flour. If the simple ground material is such an excellent imitation of flour, it is difficult to see how, if it were mixed with flour in the proportions indicated in the circular, the busy housewife would be able to detect its presence.

CONCLUSION.

It has been our purpose to inform the public of this effort to impose upon them and to put them on their guard. We have not named individuals, but these names may be obtained if desired by the proper authorities. We wish, however, to express our disapproval of this attempt to defraud our people and to congratulate them that so far as we have been able to find out, our flour millers are too honest to be seduced by the plausible scheme presented by the York Manufacturing Company.

Miscellaneous Work.

The following samples were examined under the direction of the Chemist of the Station, and where mention to the contrary is not made, the sample was obtained by a representative of the Station.

COFFEE.

The following samples of coffee were examined for adulteration. The analytical work was done by Mr. H. K. Miller, Assistant Chemist. Further information on this subject, concerning analytical methods used, etc., may be gotten from Bulletin No. 154, of this Station.

No. 1212. Choice Roast Coffee, 10c per lb., from Austin Nichols & Co., New York, bought in Charlotte, N. C.

Broken grains, hulls and sticks, 29 per cent.; rocks 2 per cent.; cold water extract 1.25 per cent.

This coffee is adulterated with coffee screens, and is heavily glazed.

No. 1213. Merchants' Standard Oriole, 13c per lb., Merchants' Coffee Co., Baltimore, Md., bought in Charlotte, N. C.

Cold water extract, 0.51 per cent. This sample was not glazed.

No. 1214. Mistletoe Coffee, 25c per lb., roaster's name not ascertained. This sample was bought in Charlotte, N. C.

Cold water extract 0.55 per cent. This sample was not glazed.

No. 1215. Durham Special Coffee, 25c per lb. Roaster not given. This was bought in Charlotte, N. C.

Cold water extract 0.45 per cent. This sample was not glazed.

No. 1216. Four Hundred Coffee, 35c per lb., Isaac Newlin, New York, bought in Charlotte, N. C.

Cold water extract 0.50 per cent. This coffee was not glazed.

No. 1261. Choice Roasted Rio, Jeffries and Stubton, Richmond, Va., bought in Wilmington, N. C.

Sticks and hulls, 4 per cent.; cold water extract, 1.1 per cent. This sample had been glazed.

No. 1262. Morning Joy, New Orleans Coffee Co., bought in Wilmington, N. C.

Cold water extract 0.40 per cent. This was not glazed.

None of the above samples contained imitation coffee.

Glazing. Two of the above samples were glazed as is shown by the per cent. of cold water extract.

BREAD.

One sample of bread tested, as described in Bulletin No. 156, by Dr. G. S. Fraps, Assistant Chemist, gave the test for alum. This sample was purchased in Statesville, N. C.

BRAN.

One suspicious sample of wheat bran was examined by Dr. G. S. Fraps, Assistant Chemist. It was purchased near Raleigh, N. C. Microscopic examination showed that the bran was adulterated with corn products.

A sample of bran sent by a private party, and suspected by him of being adulterated, was examined by Mr. C. B. Williams, Assistant Chemist, and found to contain corn cob meal to the extent of one-fourth of the whole.

COTTON SEED MEAL.

One sample of cotton seed meal suspected of being adulterated, was sent to the Station by a private party to be examined. The percentage of nitrogen was determined by Dr. G. S. Fraps, Assistant Chemist, and found to be smaller than it ought to have been. By passing it through a sieve, the cotton seed meal was separated from cotton seed hulls. Cotton seed hulls were present to extent of about 50 per cent. of the whole.

RECENT BULLETINS.

The following are some of the recent Bulletins of the Experiment Station:

No. 97. Digestion Experiments, Fig. 1. pp. 48.
No. 98. Some Leguminous Crops and Their Economic Value, cuts 9, pp. 40.
No. 99 Thread Worm of Pork (Trichina Spiralis), cuts 9, pp. 8.
No. 100. Our Common Insects, cuts 65. pp. 36.
No. 101. The Progress of the Dairy Industry in North Carolina, pp. 8.
No. 102. Encouragement to the Dairy Industry, pp. 12.
No. 103. Miscellaneous Agricultural Topics. pp. 24.
No. 104. Why Pull Your Corn Fodder? pp. 4.
No. 105. The Chestnut and Its Weevil: Nut Culture, pp. 12.
No. 106. Rational Stock Feeding, pp. 44.
No. 107. Propagation of Flowering Bulbs in North Carolina, plates 24, pp. 24.
No. 108. Seed Testing; Its Uses and Methods, pp. 64.
No. 109 Feeding Trials With Animals, pp. 34.
No. 110. Marls and Phosphates of North Carolina, pp. 50.
No. 111. The Fertilizer Control During 1894, pp. 26.
No. 112. Trucking in the South, pp. 70.
No. 113. The Testing of Milk, cuts 4, pp 32.
No. 114. Tests of Dairy Implements and Practices, cuts 4, pp. 32.
No. 115. Miscellaneous Agricultural Topics, pp. 20.
No. 116. Milk Records and Tests, pp. 16.
No. 117. Tuberculosis and Its Prevention, pp. 20.
No. 118. Cotton Seed Hulls for Beef Production, pp. 4.
No. 119. Volumetic Estimation of Phosphoric Acid, pp. 21.
No. 120. Cultivation of the Peach Tree. 42 cuts, pp. 31.
No. 121. Hillside Terraces or Ditches 8 cuts, pp 5.
No. 122. Types of Tobacco and Their Analyses (Technical), pp. 35.
No. 123. Miscellaneous Agricultural Topics, pp. 10.
No. 128. Pests of Grain Crops, pp. —.
No. 129. Horticultural Experiments at Southern Pines, 1895, pp. 46.
No. 130. Poultry Keeping for Profit, 39 cuts, pp. 53.
No. 132. The Home Vegetable Garden and Its Pests, 8 cuts, pp. 54.
No. 133 Some New Forage Fibre and Other Useful Plants, pp. 2.
No. 136. Fertilizer Analyses of the Fertilizer Control, pp. 34.
No. 137. A Warning in Regard to Compost Peddlers, pp. 8.
No. 138 San Jose Scale in North Carolina, 1 cut, pp. 14.
No. 139. Home Mixed Fertilizers and Composts, pp. 16.
No. 140. Volumetric Estimation of Phosphoric Acid (Technical), pp. 8.
No. 141. A New Tobacco Pest, 2 cuts, pp. 8.
No. 142. Comfortable Low Cost Barns, 12 cuts, pp. 20.
No. 143. Feeding Experiments, Milk Records, etc., pp. 36.
No. 144. Ornithology of North Carolina, pp. 36.
No. 145. Crimson Clover, pp 20.
No. 146 Miscellaneous Farm Bulletin, pp. 16.
No. 147. A Study of Lettuces, pp. 8.
No. 148. Digestion Experiments, pp. 32.
No 149 The Apple in North Carolina, pp. 22.
No. 151. The Fertilizer Control for 1897, pp. 12.
No. 152. Poultry Notes, pp. 24.
No. 153. Vinegar Adulteration, pp. 8.
No. 154. The Adulteration of Coffee and Tea, pp. 16.
No. 155. Baking Powders on Sale in North Carolina, pp. 8.
No. 156. The Adulteration of Flour, pp. 12.
No. 157. Mineraline.

Any of the above will be sent cheerfully upon application by Postal Card to the Director of the N. C. Agricultural Experiment Station, Raleigh, N. C.